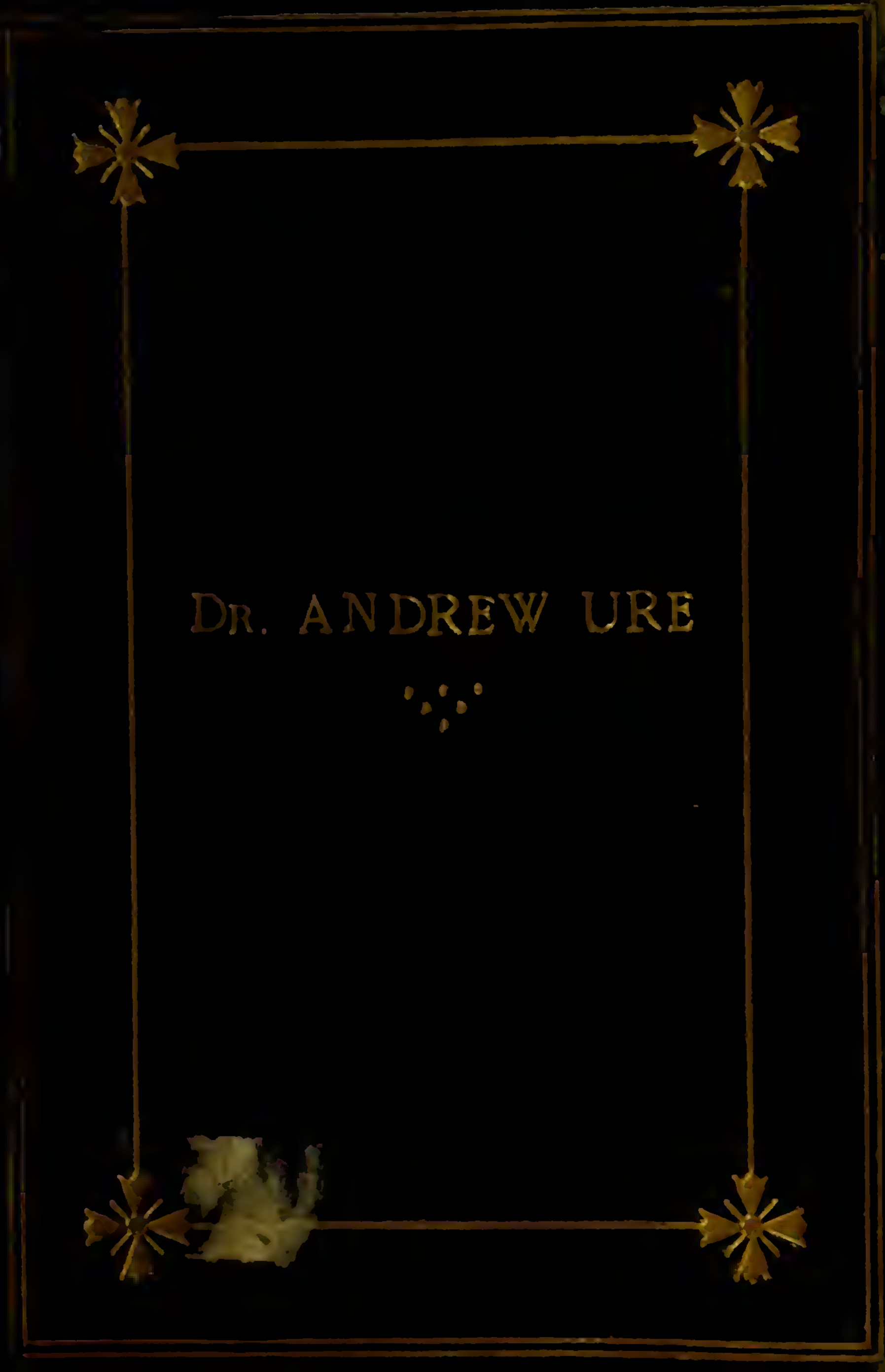

DR. ANDREW URE

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Dr. William Chalmers
From
Katherine Ure Mackinlay
May 4th 1882.

DR. ANDREW URE.

1628

Dr. ANDREW URE,

F.R.S.—M.G.S.—M.A.S., London—
M. Acad., N. S. Philad.—S. Ph. Soc. N. Germ.—
Hanov.—Mulii.—&c., &c., &c.

A slight sketch, reprinted from "The Times"
and various other Periodicals, of January, 1857.

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LONDON, 1876.

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Dr. ANDREW URE, F.R.S.

Extracts from various Journals, January, 1857.

Dr. Ure, one of the veterans of chemical science, a contemporary of Davy and Wollaston, of Gay Lussac and Berzelius, died on the 2nd inst., after a few days illness, at the age of 78. His name is associated with some original and remarkable researches, but he will be chiefly distinguished in the annals of science, by his success in the application of Chemistry to the Arts, and to Manufactures. In this special department, both as a teacher and a writer, he was unrivalled;—and with beneficial results not confined to his own country.

It was in consequence of an official report, by M. (afterwards Baron) Charles Dupin, to the French Government, on the influence of of Dr Ure's tuition on the Manufactures of Glasgow, that new courses of lectures on the same plan, were instituted at the Conservatoire des Arts et Metiers, in Paris; one course, *Sur la Mecanique Appliquee,* under M. Charles Dupin, and another *Sur la Chimie Appliquee* under M. Clement-Désormes.

Dr Ure had then, for many years superintended the practical school of Chemistry at the Andersonian University of Glasgow, his class at one time numbering above four hundred. The fruits of this tuition will be best appreciated from the words of Baron Dupin's report.

“ L’ Institution Andersonienne, a
“ produit des résultats étonnants.
“ C’est une chose admirable que de
“ voir aujourd ’hui dans beaucoup
“ d’ateliers de Glasgow, de simples
“ ouvriers posséder et développer,
“ au besoin, les principes de leurs
“ opérations, et les moyens théoré-
“ tiques d’ arriver aux résultats
“ pratiques, les plus parfaits pos-
“ sibles. Le principal Professeur
“ de l’ Institution Andersonienne,
“ le Docteur Ure, m’a conduit
“ lui-meme dans toutes les manu-
“ factures importantes, et dont

" un grand nombre sont dirigées " par ses élèves." This was in 1817.

The teaching of the application of Chemistry to the Arts has since been introduced into almost every University, and into many public Institutions. To Dr. Ure belongs the honour of having taken the lead in a movement which has had incalculable power in developing national wealth, and promoting the interests both of Science and Art.

The influence, which in early life he exerted as a Teacher, he continued in later years as an Author. His "Dictionary of Chemistry," and his "Dictionary of Arts, Manufactures, and Mines," have passed through many editions, and have been translated into the leading Continental languages. No works have done more for directing and extending the applications of Science, to the ordinary uses of life.

Dr. Andrew Ure was born at Glasgow, May 18th, 1778. He studied at the University of his native town, and afterwards at that of Edinburgh. He took his Doctorate in Medicine at Glasgow in 1801, having previously obtained the degree of Master of Arts. In 1804 he was appointed, on the resignation of Dr. Birkbeck, Professor at the Andersonian University, where for many years he was an eloquent Lecturer on Chemistry, Natural Philosophy, Materia Medica, and Mechanics, and was most successful in his Class experiments. Among his Pupils are found the names of Mr. William Fairbairn, Mr. Nielson, Mr. Monteath, Mr.

Farey, Mr. Thomson, of Clitheroe, &c. In 1809, when the Glasgow Observatory was about to be established, Dr. Ure came to London, commissioned to make the scientific arrangements. Here he met, and acquired the friendship of, Maskelyne, Pond, Groombridge, and other Astronomers. and also of Davy, Wollaston, Henry, and other distinguished chemists of that day. He was introduced to Troughton by Colonel, now Sir T. Brisbane, the President of the Royal Society of Edinburgh.

At the Glasgow Observatory, where Dr. Ure resided for several years, he was honoured with a most friendly visit by the celebrated Dr. Herschel.

In 1818 a paper was read before the Royal Society, and was published in the "Philosophical Transactions" of that year—'New experimental researches on some of the leading doctrines of caloric, particularly, on the relation between the elasticity, temperature, and latent heat of different vapours, and on thermometric admeasurement and capacity.' The conclusions of this paper were adopted by Mr. Ivory, Mr. Daniell, and other philosophers, as the basis of their meteorological theories.

A paper 'On Sulphuric Acid, and the law of progression followed in its densities at different degrees of dilution,' in the Journal of the Royal Institution, 1817, was remarkable as an example of the useful application of logarithms to Chemistry. A physico-geometrical paper 'On Mean Specific Gravity,' appeared in the Journal the same year, and in the next year, 'Experiments to determine the constitution of liquid Nitric Acid, and the law of progression of its density at various degrees of dilution.' Dr. Ure's Tables of these acids, the two most important of chemical agents, have been since, generally adopted by Chemists.

In a paper on 'Saline Crystallization,' the relation to voltaic electricity to that phenomenon, was investigated for the first time. An account of some experiments with galvanism, made by Dr. Ure on the body of Clydesdale the murderer, immediately after execution, caused no little noise at the time, the rumour of which, Byron has recorded in his 'Don Juan.' An interesting record of this case is to be found in the Dictionary of Chemistry, under 'Galvanism.' A paper in the 'Philosophical Transactions' May 1822, 'On the Ultimate Analysis of Vegetable and Animal Substances,' contains some of the earliest accurate researches in organic chemistry, a department which Dr. Ure considered was afterwards cultivated by some German chemists in a manner which justified the protest of Berzelius, against what he called "The Physics of Probabilities."

In a paper 'On Muriatic Acid and Chlorine,' in the Edinburgh Philosophical Transactions for 1818, Dr. Ure described the rudiometer which bears his name.

These are but few of the subjects in every department of Chemical research, treated in a succession of papers, that appeared in the various Scientific Journals; as he has published no less than 40 distinct Works and Essays of a chemical or philosophical bearing. Among these were valuable Reports of Foreign Science, containing methodical digests of foreign discovery, including comments and comparisons with British Science.

In 1821 'The Dictionary of Chemistry' was first published, of which many editions have since appeared. In 1824 was published a translation of 'Berthollet on Dyeing and Bleaching,' in two octavo volumes:—and in 1829—

'A new system of Geology.'

In 1830 Dr. Ure came to reside in London, and was appointed in 1834, Chemist to the Board of Customs. The important researches on sugar refining, which he conducted for the Government, led to the fixation of the then established duties. In 1835, he published 'The Philosophy of Manufactures,' and in 1836, a work on 'The Cotton Manufactures of Great Britain compared with that of other countries.' Mr. William Fairbairn of Manchester, has stated that any person might easily make all the machines required for the Cotton manufactures, by the perusal of Dr. Ure's book:—a sufficient proof of the fulness and accuracy of the descriptions and illustrations.

The 'Dictionary of Arts, Manufactures, and Mines,' was first published in 1837, with a supplement two years later: the whole having been repeatedly revised, to include the most recent discoveries and inventions, and greatly enlarged in the latest edition of 1853. This is a book of vast research, and the variety of subjects embraced in it, may be estimated from the fact, that on the French translation, it was thought advisable to employ nineteen *collaborateurs,* all regarded as adepts on their special subjects.

Dr. Ure thus honourably occupied a position in scientific work, analogous to the literary feat of Dr. Johnson, who, single-handed, produced his English Dictionary, the counterpart of which was the fruit of the united labours of the French Academy.

During his residence in London, Dr. Ure's practical occupation in chemistry has chiefly been the conduct of analyses for the Government, or on consultation for commercial purposes. His skill and accuracy as an analytic chemist were well known, as well as the ingenuity of the means employed in his researches:—and it has been stated, on good authority, that none of his results have ever been impugned. His extensive knowledge not unfrequently enabled him to arrive at conclusions, and to demonstrate facts considered impossible by his compeers in Science. Of this quality the detection and estimation of Wood Spirit in Alcohol is a striking instance. From the beginning of his career he was noted as an experimental operator. We have seen a letter from the late Professor, E. D. Clarke, of Cambridge, in which, writing to Dr. Ure in 1822, he says:—" I wish very much you had examined the small quantity of gas which you collected from Plutonium. It remained on my table long after we lost you, to the regret of all who saw it; because the experiment required a hand like yours, and we could do nothing with it."

Although in infirm health for some years past, Dr. Ure retained his mental energy, and his conversation was always most interesting and instructive. Distinguished as a sound chemical philosopher, his information was not confined to scientific subjects alone. He was a good linguist, and a fair classical scholar; deeply read also in Theology and Biblical criticism; and well acquainted with Foreign, as well as English Literature. Dr. Ure was elected a Fellow of the Royal Society in 1822. He was one of the original Fellows of the Geological Society; he also belonged to the Astronomical Society, and was a Member of several scientific bodies in this country and abroad.

His portrait, by Daniel Macnee, President of the Royal Scottish Academy, now hangs in the South Kensington Museum.

Dr. Ure has left behind him

many sincere friends and admirers, in proof of his worth as a Christian and a gentleman

His Funeral took place on the 8th inst., (January, 1857,) at the Highgate Cemetery.

A Tablet has since been placed to his memory in the beautiful Cathedral of his native city.

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BAINES, TYP., FAIRFAX ROAD, BELSIZE, N.W.

LINES

Composed after attending the funeral of the late Dr. Ure, F.R.S. January, 1857.

BY DR. WILLIAM BEATTIE.

The last sad office to our Friend is paid;
Affection lingers where his dust is laid:
But, from the Mourner's cheek Hope wipes the tear.
And, pointing upward, cries—"He is not here!"

In him Philosophy and Faith combined;
Science enlarged, and Truth illumed his mind;
He harmonized Divine with human lore.
And weighed *this* life, with that which lies before:
The love of knowledge fired his ardent youth;
His age was radiant with the light of Truth:
And *his*, the best reward to Science given—
The calm research that brings us nearer Heaven.

Walking with Science—every step he trod—
Each problem solved— disclosed a present God:
Whose mystic hand unlocks the realms of Art;
Moves, and controls, the universal heart;
And in the sacred light of Nature's laws—
Reveals, and leads us to the great first Cause!

'Twas *his*, mysterious regions to explore,
And scatter light, where all was doubt before:
He pressed the spring, and saw, with glad surprise,
Old mysteries vanish—novel forms arise.

Honoured alike in either hemisphere:
Auspicious Science smiled on his career.
His life—one lengthened course of mental toil—
With arts, and industry, has blessed the soil;
Those peaceful arts that bid her wealth expand,
And scatter riches o'er a grateful land.

Still—midst the fame spontaneous nations paid,
His heart its inward Monitor obeyed:
He felt that *Fame* was but an idle breath—
Vain as a chaplet on the brow of Death:
He looked *beyond* the boundaries of Time
For holier triumphs—lasting and sublime!

'Twas *his*, from all the busy world apart,
To muse on Heaven—to commune with his heart:
And taste with kindred souls, the sweet repose,
When life, like sunshine, brightens at the close.
A ripe Philosopher—a Christian Sage—
He closed in peace his earthly pilgrimage:
And dying, felt the soul-sustaining trust
That smiles at death, and blossoms in the dust!

W. B.